

VALVE GATED INJECTION MOLDING SYSTEM WITH
INDEPENDENT FLOW CONTROL

ABSTRACT OF THE DISCLOSURE

An injection molding system includes a manifold and a valve gated hot runner nozzle. The gating mechanism includes an actuated valve pin, where the mold gate orifice is open when the valve pin is in a first position to allow melt to flow there through. The mold gate orifice is closed when the valve pin is in a second position to prevent melt from flowing there through. A flow control pin is disposed within the melt stream, either coaxially with the valve pin within the melt channel of the nozzle or within the manifold melt channel. The flow control pin has a head with a complementary geometry with that of the melt channel at a flow control surface. The flow control pin is raised and lowered by an actuation mechanism to constrict or release the flow of the melt stream independent from the movement of the valve pin.